Quick Installation Guide

Fastrax III

1/4" Day/Night Dome Camera, PTZ, 22x
EDC-3222

eneo®

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1. Safety Instructions / Maintenance

- Read these safety instructions and the operation manual first before you install and commission the camera.

- Keep the manual in a safe place for later reference.

- Protect your camera from contamination with water and humidity to prevent it from permanent damage.
  Never switch the camera on when it gets wet. Have it checked at an authorized service center in this case.

- Never operate the camera outside of the specifications as this may prevent the camera functioning.

- Do not operate the cameras beyond their specified temperature, humidity or power ratings.

- Operate the camera only at a temperature range of 0°C to +50°C and at a humidity of max. 90%.

- To disconnect the power cord of the unit, pull it out by the plug. Never pull the cord itself.

- Pay attention when laying the connection cable and observe that the cable is not subject to heavy loads, kinks, or damage and no moisture can get in.

- Do not attempt to disassemble the camera board from the dome.

- The warranty becomes void if repairs are undertaken by unauthorized persons. Do not open the camera housing.

- Never point the camera towards the sun with the aperture open. This can destroy the sensor.

- Installation, maintenance and repair have to be carried out only by authorized service centers.
  Before opening the cover disconnect the unit from mains input.

- Contact your local dealer in case of malfunction.

- Only use original parts and original accessories from Videor E. Hartig GmbH.

- Do not use strong or abrasive detergents when cleaning the dome. Use a dry cloth to clean the dome surface.
  In case the dirt is hard to remove, use a mild detergent and wipe gently.

- All openings provided in the housing for assembly purposes must be closed and/or sealed.

- **The installer is responsible for ensuring that the degree of protection as per the technical specifications is upheld, e.g. by using all enclosed gasket seals and O-rings, by waterproofing the cable exits with silicon or through laying the cable in such a way that the cable does not act as a „gutter".**

- **During assembly, care must be taken to ensure that existing seals are correctly inserted and are not displaced as a result of assembly.**
  You must not continue to use damaged seals.

NOTE: **This is a class A digital device. This digital device can cause harmful interference in a residential area;**
        in this case the user may be required to take appropriate corrective action at his/her own expense.

2. Introduction

2.1 Features

The Fastrax III dome camera and the keyboard controller make up the building blocks for any surveillance/security system. Using multiple Keyboard Controllers and multiple dome cameras, no place is too large for monitoring. Extensible and flexible architecture facilitates remote control functions for a variety of external switching devices such as multiplexers and DVRs.

- Built-in optical power zoom camera with True Night Shot function

- 240 Preset positions.

- 8 Tours consist of Preset, Pattern, Auto-Scan and other Tours can be programmed with over 300 functions and Preset location.
  While moving, each Preset scan can be watched in smooth **Vector Scan** mode.

- 16 Auto Scans with the normal, the vector, and the **random** mode and the Endless **Auto-Pan** with 13 speed steps

- 8 Patterns (up to 500seconds)

- 8 Privacy zones

- 16 Area Titles

- 8 Alarm inputs / 4 Aux outs (NC & NO)

- Variable speed from 0.1°/sec to 380°/sec
  Three Variable speed (SLOW, NORMAL, TURBO). Turbo speed is Max 380°/sec with CTRL key pressed

- Pan / Tilt speed is inversely proportional to the zoom ratio with the option.

- Maximum speed is 380°/sec when preset command

- Auto Calibration from 0.1° to 6° (Tilt range is 0° to 180°)

- Programmable user preferences (alarm, preset, title, etc.)

- 180° Digital Flip or 90° Auto Flip depended on the model

- Up to 999 selectable camera addresses (3999 by software setting)

- Multi-Language Menu Display, Password Confirmation

- Function Run Menu using DVR without function key (Pattern, SCAN, ...)

- Built-in RS-485/422 receiver driver

- Optional Clear bubble with black liner (shelter) for concealing the camera

- Optional Tinted Bubble, Indoor & Outdoor pendant housing with heater & blower, Indoor Flush mount, Parapet mount & Roof Top mount
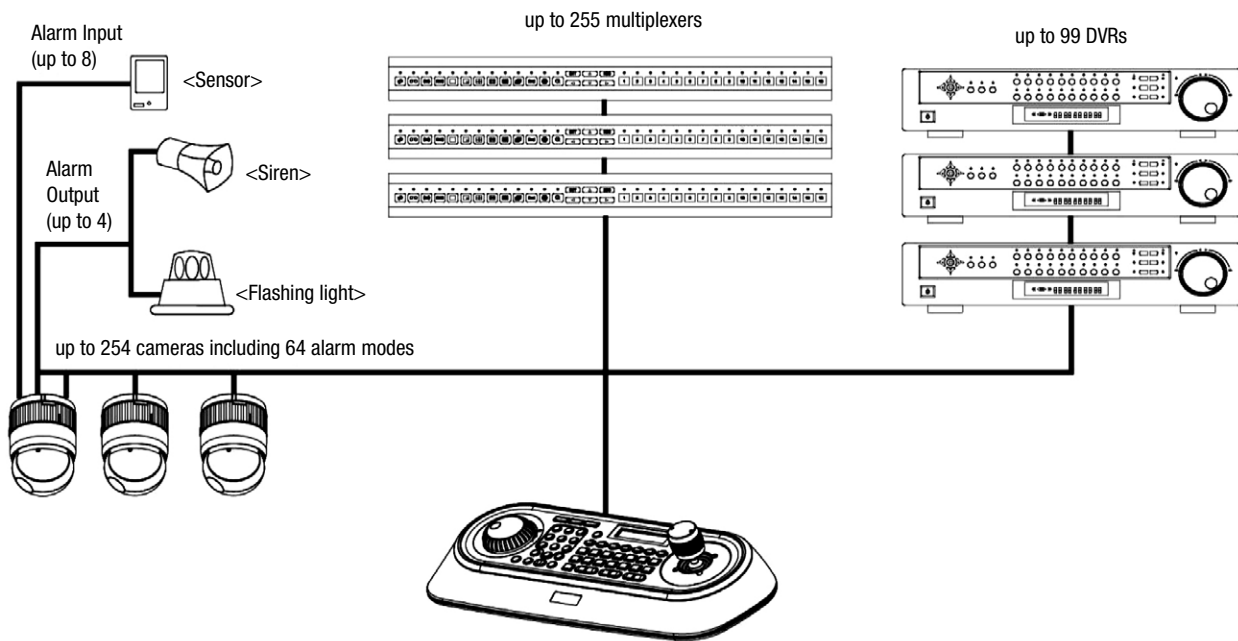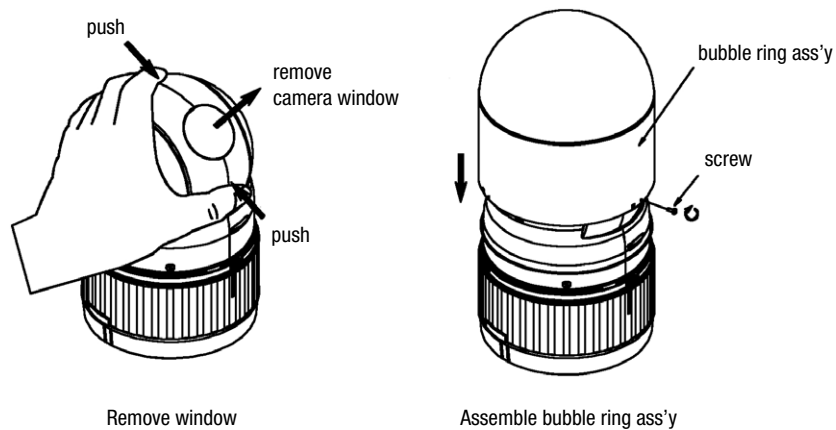
Figure 1 - Typical System Configuration

Alarm Input (up to 8)

<Sensor>

Alarm Output (up to 4)

<Siren>

<Flashing light>

up to 254 cameras including 64 alarm modes

up to 255 multiplexers

up to 99 DVRs

push

remove camera window

push

Remove window

bubble ring ass'y

screw

Assemble bubble ring ass'y

Figure 2 - Optional Assemble bubble ring ass'y

NOTE: It is recommended to remove camera window for improving picture quality when you assemble bubble ring ass'y.

CAUTION: When installing a Fastrax dome on a high pole outside, caution should be taken to avoid vibration and shaking of Fastrax dome due to windload or shock of passing heavy vehicles. If pole is not stable enough, it may cause malfunction in accurate tilt positioning.

3. Installation and Configuration

3.1 Package Contents

The package contains the following:

1x Fastrax III (Dome Camera)
1x Bubble ring (optional)
1x Instruction manual
3x Assembly screws for attaching Fastrax III
3x Plastic anchor
1x 10Pin Connector
2x 12Pin Connector

CAUTION: Be sure to have caution labels (E version only) on both body and base of the camera. Different version will not support alarm input and output.

The dome camera is for use in surface mounting applications and the mounting surface should be capable of supporting loads up to 4.5kg.

The dome camera's base should be attached to a structural object, such as a hard wood, wall stud or ceiling rafter that supports the weight of the dome camera.
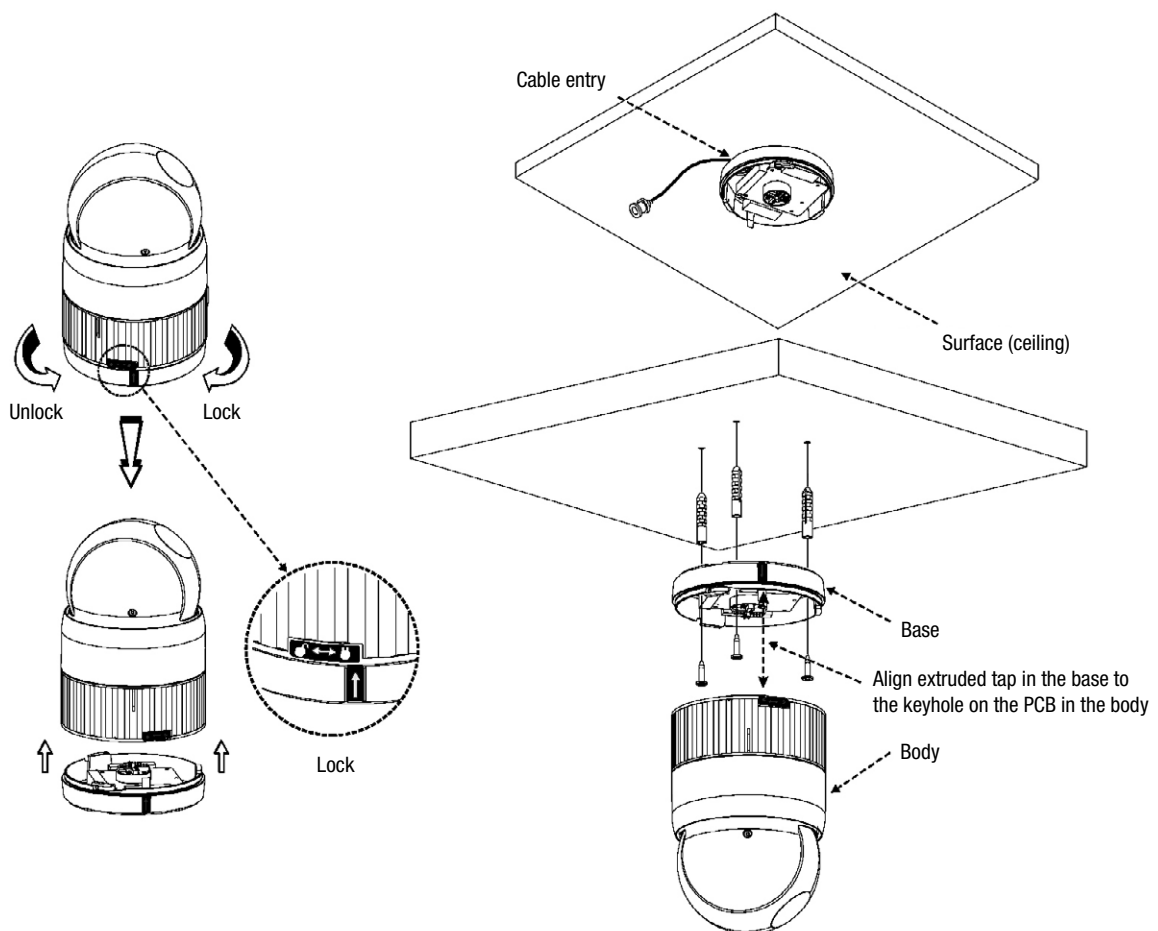

Figure 3 - Installation

3.2 Basic Configuration of Fastrax III Dome Camera System

	J-Box	Dome
RS485(+)	DOME1 +	RX+(TX+)
RS485(-)	DOME1 -	RX-(TX-)

Power 24VAC

STP AWG #24

Sensor
Alarm input
up to 8

Siren

Light
Alarm output
up to 4

BNC

Monitor

Alarm output
1 ~ 2

Alarm input
1 ~ 4

NO2 NC2 COM2 NO1 NC1 COM1 GND AL4 AL3 GND AL2 AL1

Power
24VAC

AC+
AC-
FGND
(RX+)
(RX-)
RX+(TX+)
RX-(TX-)
GND
AC-
AC+

Dome1+

Dome1−

(RX+)
(RX-)
RX+(TX+)
RX-(TX-)

RS-485

(RS-422)

NO4 NC4 COM4 NO3 NC3 COM3 GND AL8 AL7 GND AL6 AL5

Alarm output
3 ~ 4

Alarm input
5 ~ 8

RS-485
Half Duplex mode: RX+(TX+), RX–(TX–)

RS-422
Simplex mode: (RX+), (RX–)
Duplex mode: RX+(TX+), RX–(TX–), (RX+), (RX–)

G − + G − +
DOME2 DOME1

Rear

G − + G − +
DOME2 DOME1

Rear
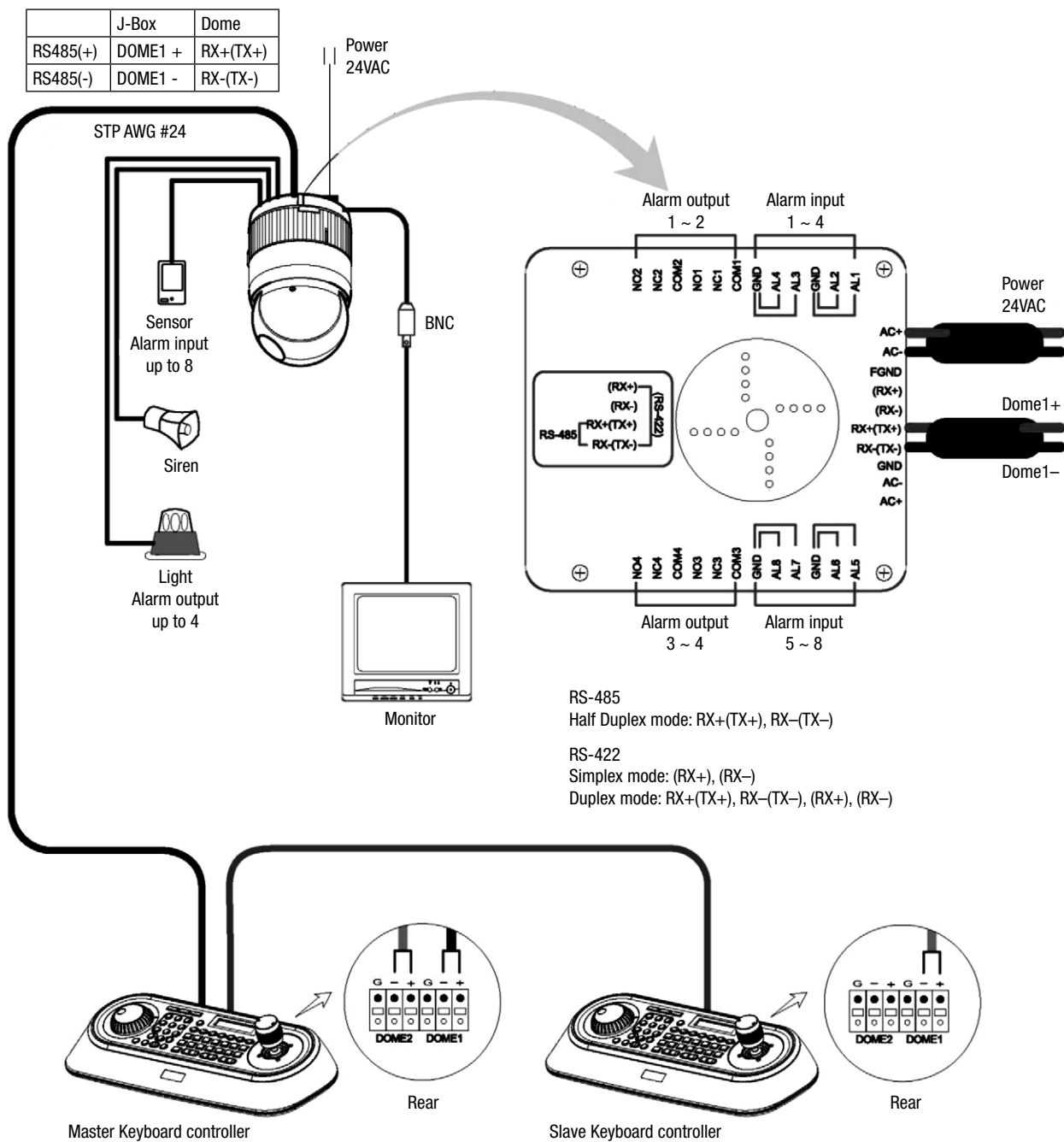
Master Keyboard controller

Slave Keyboard controller

Figure 4 - Basic installation diagram

The dome camera must be installed by qualified service personnel in accordance with all local and federal electrical and building codes.
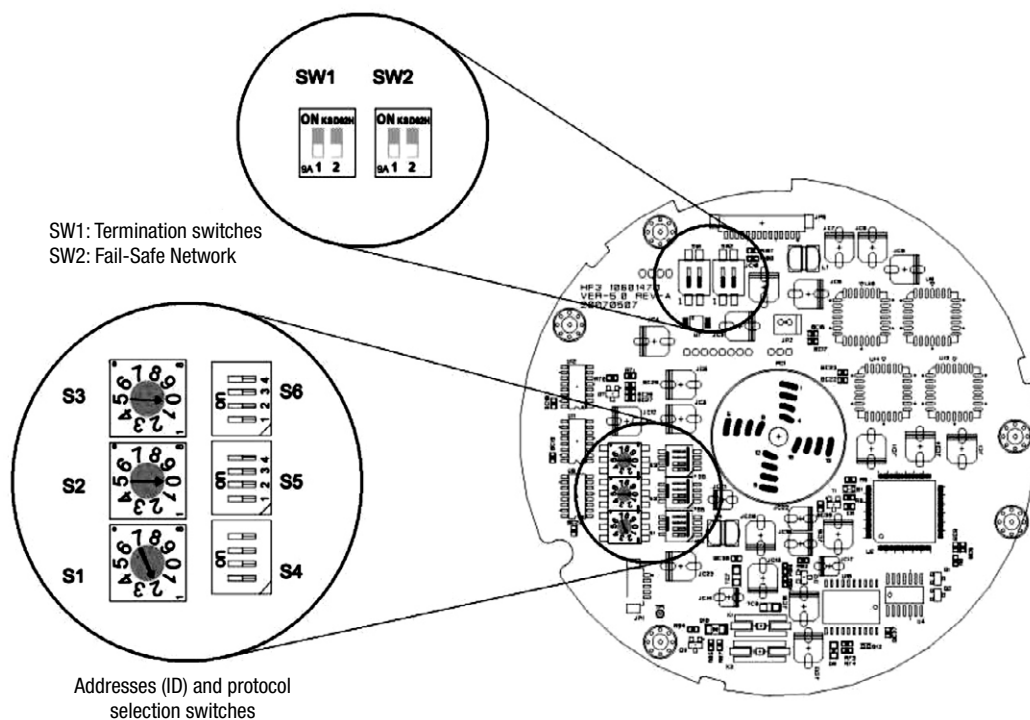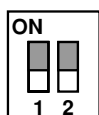The system should be installed according to Figures 4 through 9.

SW1: Termination switches
SW2: Fail-Safe Network

Addresses (ID) and protocol
selection switches

Figure 5 - Layout of Switches

3.3 Setting Dome Camera Termination

The device which is connected at end of line, whether it be a dome camera or keyboard controller, must have the cable for communication terminated by setting the appropriate DIP switch. Without proper termination, there is potential for control signal errors. Total length of the cable for communication should not exceed 1.2km.

SW1

SW1	1	2
Terminated	ON	ON
Not terminated	OFF	OFF

Figure 6 - Setting Dome Camera Termination

3.4 Fail-safe Network

When you control the dome by the other device not own keyboard, some error may be existed in the serial communication. The reason is caused by the other device without the fail-safe network.

At this time, you solve the problem to set this DIP switch to ON of the nearest dome from the other device only.
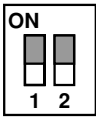
SW2

SW2	1	2
ON	PULL-UP	PULL-DOWN
OFF	NONE	NONE

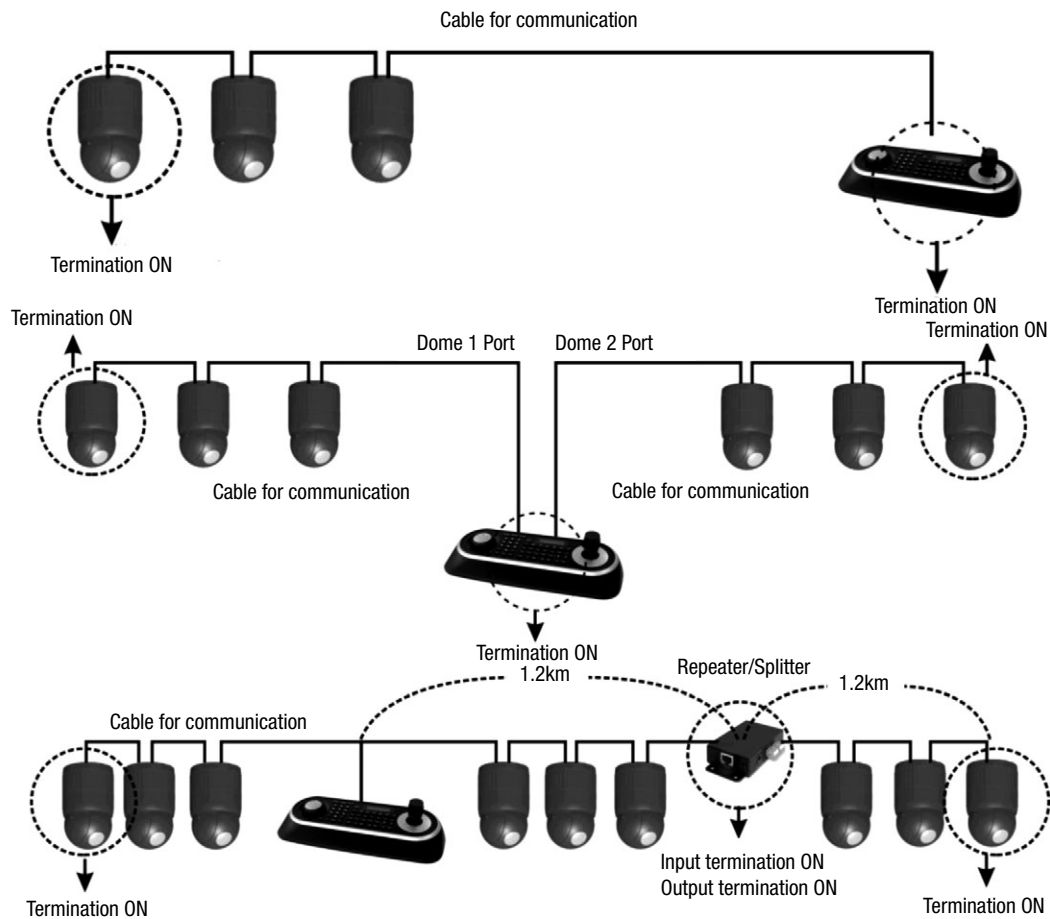Figure 7 - Setting Dome Camera Termination

Figure 8 - Termination Diagram

3.5 Setting Dome Camera Address (ID)

To prevent damage, each dome camera must have a unique address (ID). When installing multiple dome cameras using a multiplexer, it is suggested that the dome camera address matches the multiplexer port number.

If you wan to set the address more than 999, you should connect the service provider.

Example: Port 1 = Dome 1, Port 2 = Dome 2 ... Port 16 = Dome 16. If more than 16 dome cameras are installed using two or more multiplexers, ID of the dome camera should be ID of MUX x No. of camera IN. (e.g. multiplexer ID= n, Camera IN= m then ID of Dome =16x (n-1) +m)

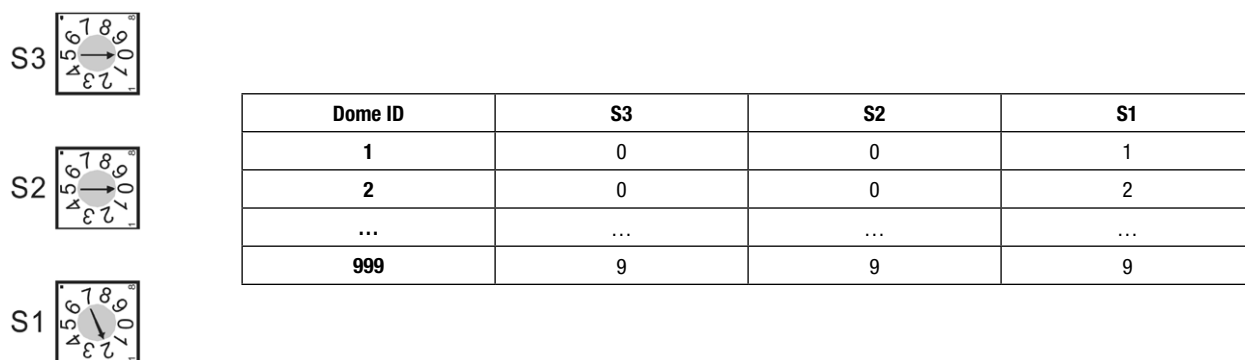Refer to Figures 4-5 for setting the dome camera address (ID) and protocol selection.

Dome ID	S3	S2	S1
1	0	0	1
2	0	0	2
…	…	…	…
999	9	9	9

Figure 9 - Setting Dome Camera Address (ID)

3.6 Setting Dome Camera Protocol

If a dome camera is to be installed with a Fastrax keyboard controller, select the default protocol.
Consult service personnel if a dome camera is installed with device other than a keyboard controller.

S/W		On	Off	Function
D1	S4-1	Enable	Disable	Alarm
D2	S4-2	PAL	NTSC	NTSC/PAL
D3	S4-3			(Reserved)
D4	S4-4	RS-422	RS-485	RS-422/RS-485

D5	D6	D7	D12	Protocol
S5-1	S5-2	S5-3	S6-4	
Off	Off	Off	Off	F2, F2E, Pelco-D, Pelco-P: **Default**
Off	Off	On	Off	F2, F2E
Off	On	Off	Off	Sensormatic RS-422
Off	On	On	Off	Pelco-D, Pelco-P
On	Off	Off	Off	Vicon
On	Off	On	Off	Ernitec
On	On	Off	Off	(Reserved)
On	On	On	Off	F2
Off	Off	Off	On	**Philips (Bosch)**
Off	Off	On	On	(Reserved)
Off	On	Off	On	**Dynacolor**
Off	On	On	On	(Reserved)

D8	D9	D10	Baud Rate
S5-4	S6-1	S6-2	
Off	Off	Off	2400 bps
Off	Off	On	4800 bps
Off	On	Off	9600 bps **(Default)**
Off	On	On	19200 bps
On	Off	Off	38400 bps

D11	Parity Bit
S6-3	
Off	None
On	Even

Figure 10 - Protocol Selection Switches

3.7 Connections

- **Connecting to the RS-485/-422**

  The dome camera can be controlled remotely by an external device or control system, such as a control keyboard, using RS-485 half-duplex, RS-422 full duplex or simplex serial communications signals. Connect Marked Tx+, Tx- to Tx+(Rx+) and Tx-(Rx-) of the RS-485 control system.

  If control system is RS-422, connect Rx+(Tx+), Rx+ (Tx-) and Rx+, Rx- of the dome camera to Rx+, Rx- and Tx+, Tx- of the control device respectively.

- **Connecting Video out connector**

  Connect the video out (BNC) connector to the monitor or video input.

- **Connecting Alarms**

  AL1 to 8 (Alarm In)

  You can use external devices to signal the dome camera to react on events. Mechanical or electrical switches can be wired to the AL (Alarm In) and GND (Ground) connectors. See Chapter 3 - Program and Operation for configuring alarm input.

  GND (Ground)

  NOTE: All the connectors marked GND are common.

  Connect the ground side of the Alarm input and/or alarm output to the GND connector.

  NC(NO)1 TO 4 (Normal Close or Normal Open: Alarm Out)

  The dome camera can activate external devices such as buzzers or lights. Connect the device to the NC(NO) (Alarm Out) and COM (Common) connectors. See Chapter 3 - Program and Operation for configuring alarm output.
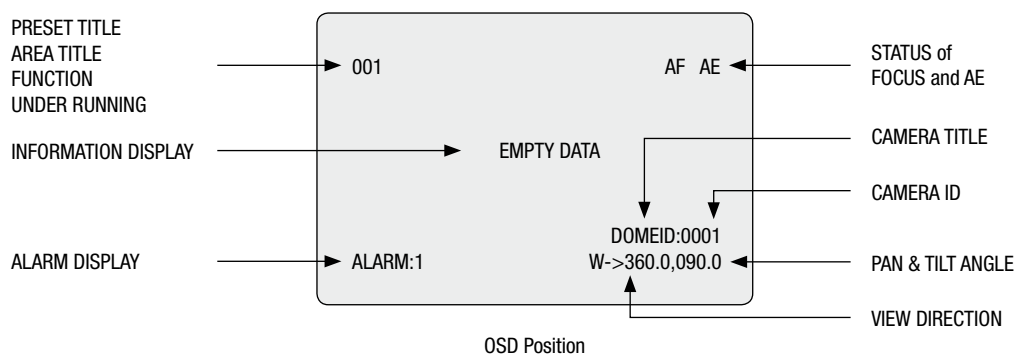
- **Connecting the Power**

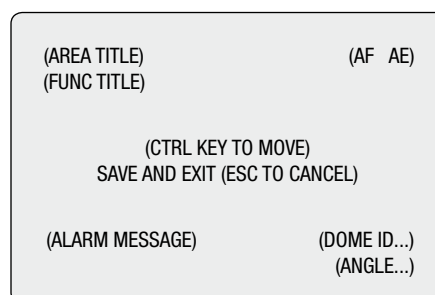 Connect the power of 24VAC 850mA to the dome camera.

  Use certified / Listed Class 2 power supply transformer only.

3.8 Getting Started

Once installed apply power to the dome camera. The dome camera will start a configuration sequence.

OSD Position

The dome can move the OSD position in the OSD position setup.

OSD Position Setup
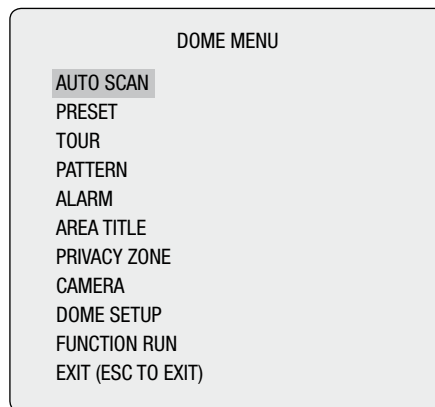
4. Program and Operation

4.1 Dome Camera Selection

Before you program or operate a dome camera, you must select the dome camera by pressing the dome camera **No.** + **CAM**.

Example: Pressing **1**, **0** and **CAM** key sequentially will select dome camera 10. The selected dome camera ID will be displayed on the LCD monitor of the keyboard controller.

4.2 Accessing On-Screen Menu Utility

You can call up the On-screen menu utility on your monitor by pressing **MENU** key on the keyboard controller, the following On-screen menu utility will appear:

```
                    DOME MENU

          AUTO SCAN
          PRESET
          TOUR
          PATTERN
          ALARM
          AREA TITLE
          PRIVACY ZONE
          CAMERA
          DOME SETUP
          FUNCTION RUN
          EXIT (ESC TO EXIT)
```

4.3 How to control On-Screen Menu Utility

Button	Function
MENU	Call on On-screen menu utility
Joystick up or down	Navigate through the menu items.
Joystick left or right or IRIS OPEN	Go into the sub-menu items.
Joystick left or right or Zoom handle twist or Tele, Wide	Change value. Enter the editing title mode.
CTRL + Joystick	Change value of angle.
IRIS OPEN	Enter the changing angle mode.
IRIS CLOSE	Exit the changing angle mode.
ESC	Escape (EXIT)

4.4 More Information

For more information, please see the Full Installation and Operating Manual.

5. Short Cut Key

Short Cut Key	Function	Short Cut Key	Function
PRST	Pop up preset setup menu		
TOUR	Pop up Tour setup menu		
PTRN	Pop up Pattern setup menu		
SCAN	Pop up Auto Scan setup menu		
NO.**+ PGM + PRST**	Store the current view at the selected number		
Short Cut Key	**Function**	**Short Cut Key**	**Function**
1 + ON	Turn On Relay 1	**1 + OFF**	Turn Off Relay
2 + ON	Turn On Relay 2	**2 + OFF**	Turn Off Relay
3 + ON	Turn On Relay 3	**3 + OFF**	Turn Off Relay
4 + ON	Turn On Relay 4	**4 + OFF**	Turn Off Relay
7 + ON	Change FOCUS to AUTO	**7 + OFF**	Change FOCUS to manual
8 + ON	Change AE to AUTO	**8 + OFF**	Change AE to manual
9 + ON	Change Night Shot to AUTO		
10 + ON	Night Shot ON (go to the manual mode)	**10 + OFF**	Night Shot OFF (go to the manual mode)
11 + ON	BLC ON (AE auto mode)	**11 + OFF**	BLC OFF (AE auto mode)
12 + ON	Digital Zoom ON (According to digital zoom setting)	**12 + OFF**	Digital Zoom OFF
13 + ON	Dome OSD ON	**13 + OFF**	Dome OSD OFF
14 + ON	Dome Area Title Display ON	**14 + OFF**	Dome Area Title Display OFF
15 + ON	View Direction ON	**15 + OFF**	View Direction OFF
100 + ON	Shutter speed auto		
101 + ON	Shutter speed 1/4 (PAL 1/3) sec		
102 + ON	Shutter speed 1/2 sec		
103 + ON	Shutter speed 1 sec		
104 + ON	WDR ON	**104 + OFF**	WDR OFF
105 + ON	Image Stabilizer ON	**105 + OFF**	Image Stabilizer OFF
150 + ON	Image Flip ON	**150 + OFF**	Image Flip OFF
151 + ON	Origin Check		
152 + ON	Place the camera in the 0° area horizontally.		
153 + ON	Go to the slow speed mode	**153 + OFF**	Go to the normal speed mode
154 + ON	Display System Information		
155 + ON	Flip the camera in the 180° area horizontally.		
250 + ON	Set the dome ID up to 3999		
888 + ENTER	Night Shot ON (in the global mode only)		
999 + ENTER	Night Shot OFF (in the global mode only)		

Some function may not operate according to the model.
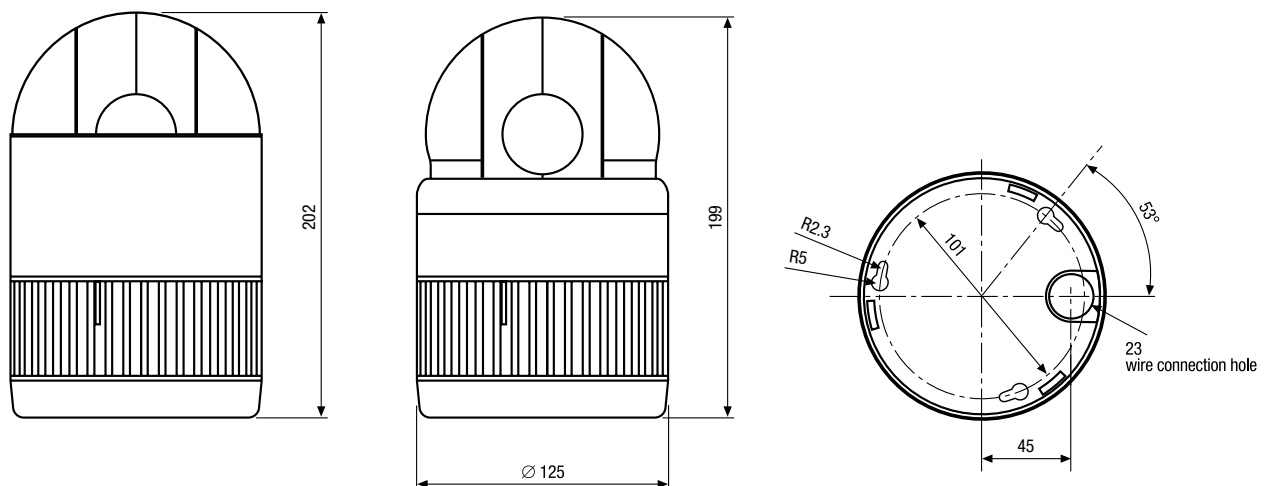
6. Specifications

Type	EDC-3222
Art. No.	74193
Series	eneo Fastrax III
System	day&night
Video standard	CCIR/PAL
Sensor size	1/4"
Imager	CCD, Sony ExView HAD Interline Transfer
Active picture elements	795(H) x 596(V) pixels
Horizontal resolution	580 TVL
Synchronization	Internal/AC line lock, phase adjustment via remote control
Signal-to-noise ratio	50dB (AGC OFF)
Sensitivity (at 50% video signal)	1.0 Lux, (colour), 0.1Lux (B&W) at F1.2 (measured)
Automatic electronic shutter (ESC)	yes
Manual electronic shutter (MES)	1/50 ~ 1/100,000sec.
Low speed shutter	yes
Digital Noise Reduction (DNR)	yes
Backlight compensation	BLC
Wide Dynamic Range (WDR)	WDR
White balance	modes: manually, automatic, indoor, outdoor, ATW, AWC
Aperture Correction (APC)	horizontal, vertical
Flickerless function	yes
IR cut filter	switchable
Privacy zones masking	8 zones masking with block or video OFF option
Menu languages	German, English, French, Spanish, Italian, Portugese, Polish
OSD function control	day&night, AGC, BLC, AWB, iris, MOD, flickerless, digital zoom, digital noise reduction (DNR), WDR, shutter mode
Text display	16 character label
Activity detection	yes
Mirror function	vertical
Digital zoom	16x
Analysis functions	activity detection
Lens type	zoom
Zoom factor	22x
Focal length	3.9mm - 85.8mm
Horizontal angle of view	49.5° - 2.46°
MOD (Minimum object distance)	1.0 m
Aperture range (F)	F1.6 (3.6) ~ F130
External adjustments	ID, Baud rate, Termination and protocol type switches
Video outputs	composite (CVBS), 1Vp-p, (C)VBS, 75ohms, BNC
Alarm inputs	8
Alarm outputs	4
Speed (manual control)	380°/sec.
Speed range at manual control (pan)	0.1° ~ 380°/sec. (proportional to zoom)
Speed range at manual control (tilt)	0.1° ~ 200°/sec. (proportional to zoom)
Preset speed	380°/sec.
Rotation range	360°
Tilt range	-10° ~ +190° (Digital Flip)
Backlash	0.2°

Patterns	8 patterns up to 500sec.
Tours	up to 8 programmable guard tours, consisting of 42 presets each and up to 12 character title display
Autoscan	16 User programmable auto scans with 13 selectable speeds and 12 character title display
Proportional pan and tilt	continually decreases pan and tilt speeds in proportion to depth of zoom
Auto flip function	180° digital flip (turns the video output from the camera upside down and reverses it horizontally)
Home position	included
Presets	240 presets with camera status (12-character title display)
Illumination	no
Serial interfaces	RS-422, RS-485
Housing material	plastic
Bubble	4.9" (125mm), clear acrylic plastic
Colour (bubble)	clear
Colour (housing)	black
Mounting	ceiling mount, housing assy
Supply voltage	24VAC, (18 ~ 30VAC), 50/60Hz
Power consumption	20W
Temperature range (operation)	0°C ~ +50°C
Vandalism resistant	no
Protection rating	n/a
Weight	1.25kg
Parts supplied	camera, manual
Certificates	CE

Optional Accessories

The optional accessories currently available can be found on our Homepages: www.videor.com and www.eneo-security.com.

7. Dimensional Drawings

Dimensions: mm